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EDITORIAL

ChatGPT in pathology

Geok Chin Tan[1,2]*, Yin Ping Wong[1,2]*

[1]Department of Pathology, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000 Kuala Lumpur, Malaysia; [2]Department of Diagnostic Laboratory Services, Hospital Canselor Tuanku Muhriz, Universiti Kebangsaan Malaysia, Jalan Yaacob Latif, Bandar Tun Razak, Kuala Lumpur, Malaysia

ChatGPT is an artificial intelligence (AI) virtual assistant, launched in November 2022. It was founded by OpenAI. The first model GPT-1 (generative pre-trained transformer) was introduced in 2018. Subsequently, it was upgraded, from the ability to analyse 117 million parameters (GPT-1) to 175 billion parameters (GPT-3).[1] These parameters are crucial for the model to understand, process information and generate responses.

The availability of digital pathology has paved the way to the utility of AI in diagnostic pathology.[2,3] At present, ChatGPT does not have the capability to directly analyse and interpret digital images. In future, the input of parameters to ChatGPT might include digital images. It will greatly improve research related to AI in diagnostic pathology. Having said that, computer vision models such as Google's Vision AI, Microsoft Azure's Computer Vision, and OpenAI's DALL-E, that have image recognition and processing ability are already available.[4]

In 2017, US Food and Drug Administration (FDA) permits the use of an AI medical device to detect diabetic retinopathy.[5] Subsequently, in 2021 the first AI-based software to detect prostate cancer was approved by FDA.[6] Whole slide imaging scanners are now fairly easily available in Malaysia and it is possible to access to quality, high-resolution images, making it possible to perform telepathology and the study AI utility in assisting pathology reporting. The incorporation of AI in pathology is inevitable in future, and we need to be able to quickly adapt to this new technology. Notably, before the implementation of AI algorithm in the clinical setting, it is crucial to get clearance by the regulatory bodies, such as the FDA, European Medicines Agency (EMA) and other regulatory bodies with guidelines to ensure safety and consistency.

ChatGPT uses in pathology

Even though ChatGPT is currently unable to interpret digital images, it still has many useful implications to practicing pathologists, students and researchers such as providing educational resources, perform a basic literature review of certain topics of interest, help to produce standardised histopathological reports, generate list of potential differential diagnosis, guidelines and diagnostic criteria to assist in the diagnostic processes, and others.

Nevertheless, there are notable limitations with the use of ChatGPT in the field of pathology. ChatGPT cannot replace hands-on experience or clinical tasks that require deep critical thinking, reasoning and advanced clinical judgment. It may also produce inaccurate or biased information, which potentially leads to misinformation without prior cross-checking with reliable sources.[7] Lastly, there is a risk for plagiarism as there is no references provided for the information from ChatGPT.[7] It should be used with caution and cross-referencing with up-to-date reputable resources and reviews from experts.

Keywords: Artificial intelligence, ChatGPT, digital pathology, telemedicine, whole slide imaging

**Address for correspondence:* Geok Chin Tan (email: *tangc@ppukm.ukm.edu.my*) and Yin Ping Wong (*ypwong@ppukm.ukm.edu.my*), Department of Pathology, Faculty of Medicine, Universiti Kebangsaan Malaysia, Malaysia. Tel: +603-61455362

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